REMARKS

Claims 1, 3-8, 10, 12-14, 16-24, 26, 27, 30-37, 41, 42, 52-66 and 68-69 are in this application and are presented for reconsideration. By this amendment, Applicant has made changes to claims 1, 20 and 42. Applicant has also canceled claim 70 and changed the dependency of claims depending on claim 70 back to dependency on claim 1. These claims are presented for reconsideration.

Claims 20-23 have been rejected as depending on canceled claim 9. Applicant has now revised claim 20 to address this issue. It is Applicant's position that the claims are clear and definite as now presented.

Claims 1, 5-8, 10, 12-14, 16-19, 24, 26, 27, 30, 31, 37, 41 and 68-70 have been rejected as being obvious based on the teachings of JP 05158399 (JP '399) in view of EP 0997175 (EP '175).

As noted by the Examiner, the JP '399 reference discloses several features including a robot arm 30 connected to a passenger station 11. However, as indicated in the rejection JP '399 fails to teach and fails to suggest a computer-control safety means as claimed. EP '175 discloses a robot based motion simulator for amusement rides. The simulator includes an industrial robot connected via a robot wrist 3 to user holding frame 1. However, it is Applicant's position that EP '175 does not show any computer-control in connection with the safety means.

EP '175 discloses a load sensing device installed between the robot wrist 2 and the user holding frame 4. This load sensing device prevents dynamic overload on the mechanical arm to protect the user or environment against collision. This system also includes a dead-man switch 4 to protect the user/passenger in case of emergency. These aspects of the system are

mechanical aspects or electromechanical aspects which are not computer controlled. Particularly a load sensing device as disclosed in EP '175 is completely mechanical and/or electromechanical, namely a spring loaded tilt device. When a preset moment is applied on the robot (the user holding frame exerts a moment on the robot wrist) a limit switch is released and an emergency stop is effected. This is particularly useful for protecting the user or payload in the case of normal robot operations from contact with external influences or collisions. This is a passive device and is not controlled by a controller or computer system. Instead, this mechanical or electromechanical safecty feature is simply connected to the emergency stop circuit as a switch.

Based on a fair reading of EP '175 and based on the prior art as a whole including JP '399 and EP '175 the prior art fails to direct a person of ordinary skill in the art toward the combination including the computer based safety means of the invention.

The prior art as a whole fails to mention a computer control safety device. Instead, the systems and features are mechanical or electromechanical and are passive and non-computer controlled.

The dead-man switch 4 disclosed by EP '175 is a switch that may be placed either in the power line or in a completely wired hardware control circuit without any computer or control interaction. This is a basic switching function and is not computer controlled or programmed. EP '175 does not provide any teaching or suggestion that the computer control can be used as claimed.

The invention provides a safety means which includes sensors connected to a computer which in turn controls various system actuators. The actuators may be electromechanical, hydraulic or pneumatic or combinations of these. The sensors can sense Gforce generated by

the amusement ride and based on computer controlled feedback may control the actuators to limit the overall Gforce. This computer control safety means provides important advantages as comparted to the prior art based on the combination of an anthropomorphic robot with multiple degrees of movement positioning the passenger station. Only the invention provides such a computer control means in this context and the prior art as a whole fails to recognize the need for this or the problems which this addresses.

New claim 71 includes the above features and further highlights the important aspects of the combination including particulars of the computer control means.

Claims 3 and 4 have been rejected as being obvious based on JP '399 in view of EP '175 and further in view of Knijpstra (US 5,558,581). Knijptra discloses a fairground device with an arm which is not a robot arm as claimed. As such, Knijpstra fails to teach an important combination of the invention, namely the particular anthropomorphic robot arm connected to a wall or ceiling. The connection of the centrally spinning structure does not present a suggestion or teaching to the person of ordinary skill in the art to provide the combination claimed.

Claims 32-36 have been rejected as being obvious based on JP '399 in view of EP '175 and further in view of Meader (US 6,079,982).

The Meader reference discloses a interactive simulator ride which has limited degrees of motion. The reference is cited for its showing of a joystick controller and other controls for the passenger. However, Meader fails to present the suggestion of such a controller working in combination with a multiaxial robot arm with significant degrees of control by the user. This is significant in combination with other features of the invention including the computer safety control means. As Meader is not concerned with significant options as to movement by

the passenger, Meader clearly fails to consider the problem which Applicant's invention solves, namely a combination of a user controlled device with six degrees of movement and the need to actively control the safety of the user. Certainly Meader and the other references fail to suggest this in combination with a computer control for limiting the exposure of the user to problematic situation including excessive Gforces and the like. The combination of a user control with multiple degrees of motion and a computer control safety is not suggestion by the prior art as a whole including Meader, EP '175 and JP '366.

Claim 42 has been rejected as being obvious based on JP '399 in view of EP '175 and further in view of Maynes (US 870,378).

The Maynes reference discloses an amusement apparatus with a central rotation point. The reference is cited for its provision of a platform for entry and exit off of the ride.

As noted above, the prior art as a whole fails to suggest the important combination of the independent claim. The use of the platform in combination with this is significant to the extent of the user or program controls the motion of the user but within safety limits. The platform can be used as a reference both for return in the case of a safety initiated situation or based on the program. Maynes is limited to a single plane and does not suggest the combination of features.

Claims 60-66 have been rejected as obvious based on JP '399 in view of EP '175 and further in view of Hayashigawa (US 5,865,624).

Hayashigawa discloses a ride simulator with a moveable base to replicate Gforces experience in a real situation. However, Hayashigawa fails to teach this structure in the context of the multi degrees of movement in combination with a computer controlled safety means. The movement in a simulator is limited and there is no suggestion to provide multi

arrangements which interact with each other and also have the safety features as claimed.

Reconsideration of the rejections is requested. Favorable consideration on the merits is requested.

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